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☐ 1. Document ID: US 20020001063 A1

L2: Entry 1 of 30

File: PGPB

Jan 3, 2002

DOCUMENT-IDENTIFIER: US 20020001063 A1

TITLE: Progressive power multifocal lens

Summary of Invention Paragraph (27):

[0020] To suppress the astigmatism to the minimum is significant and essential in order to widen the clear vision range in the worn state. However, particularly with respect to the far portion, it is not sufficient to define the clear vision range only in terms of an amount of the astigmatism. That is, in a portion in which the dioptric power largely deviates from the distance dioptric power which is predetermined by the prescription, even if the astigmatism is in an amount less than a predetermined value which is defined for the clear vision range, a blur of the image is generated due to this dioptric power error, so that the wearer can not see an object distinctly in a distance vision. An influence of the dioptric power error in the far portion for distance vision is greater than that in the near portion for near vision. For this reason, it is more important in the far vision portion to design the lens taking into consideration a dioptric power error from a predetermined distance dioptric power, rather than in the near portion.

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| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KMC | Draw Desc | Image |
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☐ 2. Document ID: US 6412948 B1

L2: Entry 2 of 30

File: USPT

Jul 2, 2002

DOCUMENT-IDENTIFIER: US 6412948 B1

TITLE: Progressive power multifocal lens

Brief Summary Text (23):

To suppress the astigmatism to the minimum is significant and essential in order to widen the clear vision range in the worn state. However, particularly with respect to the far portion, it is not sufficient to define the clear vision range only in terms of an amount of the astigmatism. That is, in a portion in which the dioptric power largely deviates from the distance dioptric power which is predetermined by the prescription, even if the astigmatism is in an amount less than a predetermined value which is defined for the clear vision range, a blur of the image is generated due to this dioptric power error, so that the wearer can not see an object distinctly in a distance vision. An influence of the dioptric power error in the far portion for distance vision is greater than that in the near portion for near vision. For this reason, it is more important in the far vision portion to design the lens taking into consideration a dioptric power error from a predetermined distance dioptric power, rather than in the near portion.

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☐ 3. Document ID: US 6262410 B1

L2: Entry 3 of 30

File: USPT

Jul 17, 2001

DOCUMENT-IDENTIFIER: US 6262410 B1

TITLE: Moisture sensor and windshield fog detector

Detailed Description Text (8):

The imaging optical system, generally identified with the reference numeral 30 (FIG. 2), is used to image a predetermined portion of the windshield 26 onto an image sensor 32 such that objects at the approximate distance of the windshield 26 are sharply in focus at the image plane while objects at a longer distance are out of focus and blurred. The area of the windshield 26 that is imaged must be large enough that the probability of receiving raindrops during relatively light rain conditions is significant. Moreover, the imaged area of the windshield must also be in the area of the windshield that is wiped by the windshield wipers.

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☐ 4. Document ID: US 6229568 B1

L2: Entry 4 of 30

File: USPT

May 8, 2001

DOCUMENT-IDENTIFIER: US 6229568 B1

TITLE: Automatic focus control method and apparatus

Brief Summary Text (13):

As described above, in the conventional automatic focus control technique in which the focus control operation is performed by searching for a peak in the focusing signal, if the contrast of an object within the distance measurement frame is rather low and if there is an object having a high contrast outside the distance measurement frame, a blurred edge portion of an object located outside the distance measurement frame can partially enter the distance measurement frame as a result of expansion of the image in a defocused state, and thus it becomes impossible to reach a correct focused state.

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☐ 5. Document ID: US 6226081 B1

L2: Entry 5 of 30

File: USPT

May 1, 2001

DOCUMENT-IDENTIFIER: US 6226081 B1

TITLE: Optical height of fill detection system and associated methods

Detailed Description Text (51):

As best seen in FIG. 16, the optics assembly comprises a mounting base 448 having at one end an integral upstanding flange 450 provided with a central aperture 452 in which the optical components are mounted. These optical components include a 50 mm fixed focal length adjustable focus objective lens 454. (Although various types of lens can be used in the optical assembly, this lens is preferably zooming and may beneficially be of telecentric design. A telecentric optical system is preferable to

avoid height of fill variations because a telecentric system, while becoming less sharp, will not change in image height with changes in the distance from the objective to the bottle.) The objective lens 454 is arranged to form an image of at least a predetermined vertical segment of the bottle containing the area of the bottle where the nominal gas/fluid interface is expected to reside for a given bottle configuration and fill level. The image may encompass the cap as well where the cap is to be a reference. The optical components of the optical subassembly 440 also include a 5 mm spacer 456, a C-mount nut 458, and a special mechanical mounting bracket 460 and C-mount barrel spacer 462, which together serve to correctly position and orient the CCD PCB 464 in the camera assembly 432. The PCB 464 carries a single 128 pixel CCD 466 and an amplifier interface connector 468. All the camera assembly electronics were assembled using off-the-shelf parts and breadboarded printed circuit boards. The base plate 448 is itself mounted on a Melles Griot optical rail guide 470 (see FIGS. 14 and 15), by means of which the whole camera assembly 432 is mounted on the optical rail 422 (see FIGS. 11 and 12).

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☐ 6. Document ID: US 6225614 B1

L2: Entry 6 of 30

File: USPT

May 1, 2001

DOCUMENT-IDENTIFIER: US 6225614 B1

TITLE: Lens barrel and motion compensation device having a motion compensation optical system position detection unit.

Brief Summary Text (33):

Objects and advantages of the present invention are achieved in accordance with a second preferred embodiment of the present invention with a motion compensation device comprising a motion compensation optical system to compensate for motion causing image blur, the motion compensation optical system comprising at least a portion of a photographic optical system; a motion compensation optical system position detection unit to detect the position of the motion compensation optical system, wherein the motion compensation optical system position detection unit includes a light emitting unit to project light, a light position detection unit to receive light from the light emitting unit and to detect a position of the received light, and a distance varying unit to vary the distance between the light emitting unit and the light position detection unit.

Brief Summary Text (36):

Objects and advantages of the present invention are achieved in accordance with a third preferred embodiment of the present invention with a motion compensation device comprising a motion compensation optical system to compensate for motion causing image blur; a motion compensation optical system drive unit to drive the motion compensation optical system; a motion compensation optical system position detection unit to detect a position of the motion compensation optical system, wherein the motion compensation optical system position detection unit includes a light emitting unit to project light, a light position detection unit to receive light from the light emitting unit and to detect a position of the received light, and a light screening member between the light emitting unit and the light position detection unit, having a light passage unit to pass at least a portion of the light from the light emitting unit, and a distance varying unit to vary the distance between the light emitting unit and the light position detection unit.

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☐ 7. Document ID: US 6198998 B1

L2: Entry 7 of 30

File: USPT

Mar 6, 2001

DOCUMENT-IDENTIFIER: US 6198998 B1

TITLE: Occupant type and position detection system

Brief Summary Text (21):

In accordance with a second aspect of the present invention, a method for determining position of an object located in a vehicle relative to a fixed structure within the vehicle comprises the steps of generating two-dimensional image data representative of any objects located within a front seating area of the vehicle, generating a two-dimensional range grid by vertically dividing the front seating area into a plurality of independent regions each representative of a predetermined size of the vehicle interior, wherein the fixed vehicle structure such as the instrument panel is located proximate to one end region, and the vehicle front seats are located proximate with the opposite end region, detecting lateral location of the object relative to a narrow depth of focus reference plane using a de-blurring filter, and determining distance from the fixed structure by comparing the generated image data with the range grid to detect which if any of the plurality of regions are occupied by an object.

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☐ 8. Document ID: US 6167229 A

L2: Entry 8 of 30

File: USPT

Dec 26, 2000

DOCUMENT-IDENTIFIER: US 6167229 A

TITLE: Image forming apparatus for enabling easy separation of recording sheets from photosensitive member

Detailed Description Text (32):

If the auxiliary roller 16 is raised to the position shown in FIG. 8, and that portion of the transfer belt 11 which has passed through the transfer region is thereby pressed against the drum surface 2a, part of the image may not be transferred, or the transferred image may be blurred. In other words, satisfactory transfer without missing image portions or image blurring, reliable separation characteristics of the recording sheet P and wide margins cannot be attained simultaneously, if the transfer belt 11 is kept in contact with the drum surface 2a more than necessary after it passes through the transfer region and separates from the transfer roller 6.

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| KNWC | Draw Desc | Image |
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☐ 9. Document ID: US 6097024 A

L2: Entry 9 of 30

File: USPT

Aug 1, 2000

DOCUMENT-IDENTIFIER: US 6097024 A

TITLE: Moisture sensor and windshield fog detector

Detailed Description Text (8):

The imaging optical system, generally identified with the reference numeral 30 (FIG. 2), is used to image a predetermined portion of the windshield 26 onto an image

sensor 32 such that objects at the approximate distance of the windshield 26 are sharply in focus at the image plane while objects at a longer distance are out of focus and blurred. The area of the windshield 26 that is imaged must be large enough that the probability of receiving raindrops during relatively light rain conditions is significant. Moreover, the imaged area of the windshield must also be in the area of the windshield that is wiped by the windshield wipers.

CLAIMS:

6. The system of claim 1, wherein the optical system causes at least a portion of the surface to be focused on the array image sensor and blurs objects at a distance greater than the surface.

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| KWIC | Draw Desc | Image |
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☐ 10. Document ID: US 6044244 A

L2: Entry 10 of 30

File: USPT

Mar 28, 2000

DOCUMENT-IDENTIFIER: US 6044244 A

TITLE: Image forming apparatus for enabling easy separation of recording sheets from photosensitive member

Detailed Description Text (32):

If the auxiliary roller 16 is raised to the position shown in FIG. 8, and that portion of the transfer belt 11 which has passed through the transfer region is thereby pressed against the drum surface 2a, part of the image may not be transferred, or the transferred image may be blurred. In other words, satisfactory transfer without missing image portions or image blurring, reliable separation characteristics of the recording sheet P and wide margins cannot be attained simultaneously, if the transfer belt 11 is kept in contact with the drum surface 2a more than necessary after it passes through the transfer region and separates from the transfer roller 6.

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| KWIC | Draw Desc | Image |
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☐ 11. Document ID: US 6005958 A

L2: Entry 11 of 30

File: USPT

Dec 21, 1999

DOCUMENT-IDENTIFIER: US 6005958 A

TITLE: Occupant type and position detection system

Brief Summary Text (20):

In accordance with a second aspect of the present invention, a method for determining position of an object located in a vehicle relative to a fixed structure within the vehicle comprises the steps of generating two-dimensional image data representative of any objects located within a front seating area of the vehicle, generating a two-dimensional range grid by vertically dividing the front seating area into a plurality of independent regions each representative of a predetermined size of the vehicle interior, wherein the fixed vehicle structure such as the instrument panel is located proximate to one end region, and the vehicle front seats are located proximate with the opposite end region, detecting lateral location of

the object relative to a narrow depth of focus reference plane using a de-blurring filter, and determining distance from the fixed structure by comparing the generated image data with the range grid to detect which if any of the plurality of regions are occupied by an object.

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| RWMC | Draw Desc | Image |
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☐ 12. Document ID: US 5923027 A

L2: Entry 12 of 30

File: USPT

Jul 13, 1999

DOCUMENT-IDENTIFIER: US 5923027 A

TITLE: Moisture sensor and windshield fog detector using an image sensor

Detailed Description Text (8):

The imaging optical system, generally identified with the reference numeral 30 (FIG. 2), is used to image a predetermined portion of the windshield 26 onto an image sensor 32 such that objects at the approximate distance of the windshield 26 are sharply in focus at the image plane while objects at a longer distance are out of focus and blurred. The area of the windshield 26 that is imaged must be large enough that the probability of receiving raindrops during relatively light rain conditions is significant. Moreover, the imaged area of the windshield must also be in the area of the windshield that is wiped by the windshield wipers.

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| RWMC | Draw Desc | Image |
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☒ 13. Document ID: US 5629752 A

L2: Entry 13 of 30

File: USPT

May 13, 1997

DOCUMENT-IDENTIFIER: US 5629752 A

TITLE: Method of determining an exposure amount using optical recognition of facial features

Detailed Description Text (115):

Meanwhile, in a case where the area of the region corresponding to the face of a human figure which is present in the original image is small, if the original is divided coarsely, the region corresponding to the actual face is mixed in or blurred with the region corresponding to the background, so that the regions corresponding to the face and other various portions of the human figure cannot be separated properly. However, if the original image is divided finely, the regions corresponding to the face and other various portions of the human figure can be respectively separated properly. Accordingly, by repeating the processing for extracting the facial region a plurality of times while changing the relative fineness of the division of the image in steps, it is possible to extract the region corresponding to the face of the human figure with a high probability irrespective of the size of the region corresponding to the face of the human figure which is present in the original image.

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| RWMC | Draw Desc | Image |
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☐ 14. Document ID: US 5602584 A

L2: Entry 14 of 30

File: USPT

Feb 11, 1997

DOCUMENT-IDENTIFIER: US 5602584 A

TITLE: Apparatus for producing a panoramic image using a plurality of optical systems

Brief Summary Text (31):

said image processing portion may be one which, with regard to at least some of said sampled pairs of corresponding points in which the degree of blur of image foreseen from the distance from the in-focus object plane of each said image taking system and the numerical aperture of each said imaging optical system exceeds a predetermined threshold value, uses the corresponding point in said reference image as said synthesized image forming data and does not use the corresponding point in said auxiliary image as said synthesized image forming data,

Detailed Description Text (126):

Also, in the formation of a highly minute image, when adjacent corresponding points of pairs of corresponding points are very proximate to each other, at least one corresponding point of that pair of corresponding points is used as synthesized image forming data and the other corresponding point is not used as synthesized image forming data, whereby any unnecessary high frequency component created in sensitive reaction to the error of the relative pixel position of the pair of corresponding points or a noise component superposed on the pixel value can be suppressed. Further, in the formation of a highly minute image, with regard to at least some of pairs of corresponding points which requires distortion correction before the sampling of corresponding points, or pairs of corresponding points in which the degree of blur of image foreseen from the distance from the in-focus object plane of each image taking system and the numerical aperture of each imaging optical system exceeds a predetermined threshold value, or pairs of corresponding points which appear at a predetermined spatial frequency or higher alternately with a pixel point for which corresponding points forming a pair are not found and an area in which the corresponding points forming said pair are not found, one corresponding point of said some pairs of corresponding points is used as said synthesized image forming data, whereby the little effective and unnecessary processing procedure in a distorted image portion, a blurred image portion and an occlusion image portion can be omitted and also the deterioration of image by wrong correspondence can be suppressed.

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| KWIC | Draw Desc | Image |
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☐ 15. Document ID: US 5499051 A

L2: Entry 15 of 30

File: USPT

Mar 12, 1996

DOCUMENT-IDENTIFIER: US 5499051 A

TITLE: Multi-lens image pickup apparatus having unsharpness correcting mechanism

Brief Summary Text (10):

If, with respect to a material point P1 on the object surface 102, there are designated respectively: unsharpness amount on a flat surface 200 conjugated with the photosensitive surface at the periphery portion of the right-side image sensor 112R, by Δ ; a distance from a front-side main point H of the right-side imaging optical system 111R to the flat surface 200, by S0; a distance from the front-side main point H of the right-side imaging optical system 111R to the object point P1, by S1; and an effective pupil diameter of the right-side imaging optical system 111R, by D, they can be represented by the following equations:

Detailed Description Text (17):

Accordingly, in this embodiment, the angle formed by the photosensitive surface of the right-side image sensor 12R and the surface perpendicular to the optical axis LR (also the angle formed by the photosensitive surface of the left-side image sensor 12L and the surface perpendicular to the optical axis LR) is set always in accordance with the following formula, irrespective of the object distance: ##EQU6## As a result, as shown in FIG. 6, the generating unsharpness amount Δ can be reduced to approximately a half amount in comparison with the conventional multi-lens imaging apparatus. According to the multi-lens imaging apparatus of this embodiment, when the object distance is an intermediate distance, as shown in FIG. 7B, the object surface 2 and the photosensitive surface of the right-side image sensor 12R are substantially conjugated so as to prevent any unsharpness from generating. Further, when a distance to the object is long or short, as shown in FIGS. 7A and 7C, respectively, although at the periphery portion of the photosensitive surface of the right-side image sensor 12R-becomes so-called forwardly focused or rewardly focused state to generate substantially the same unsharpness amount, the maximum unsharpness amount can be reduced to approximately a half of that in the conventional 10 multi-lens imaging apparatus.

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☐ 16. Document ID: US 5459542 A

L2: Entry 16 of 30

File: USPT

Oct 17, 1995

DOCUMENT-IDENTIFIER: US 5459542 A
TITLE: Image-blur preventing apparatus

Brief Summary Text (18):

drive control means for outputting a drive control signal for driving an image-blur preventing portion for performing image blur prevention in accordance with an output from an image-blur detecting portion for detecting an image blur and with a distance to an object. This arrangement enables more accurate image blur prevention.

Brief Summary Text (22):

drive control means for outputting a drive control signal for changing an operation of an image-blur preventing portion for performing image blur prevention, in accordance with a distance to an object or in accordance with a focusing state of an optical system. This arrangement also enables more accurate image blur prevention operation.

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☐ 17. Document ID: US 5087935 A

L2: Entry 17 of 30

File: USPT

Feb 11, 1992

DOCUMENT-IDENTIFIER: US 5087935 A
TITLE: Active external distance measuring system having an optical device in the light projection and light receiving paths to reduce parallax

Detailed Description Text (32):

As has been described above, in the automatic focusing apparatus of the active and external distance measurement type, by dividing the light projecting and light receiving optical paths into plural numbers of parts with different optical axes, it becomes possible to decrease the blurring of the image due to the parallax dependent

error of the distance measurement which has been produced for an object, particularly at the closest distance.

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☐ 18. Document ID: US 5005041 A

L2: Entry 18 of 30

File: USPT

Apr 2, 1991

DOCUMENT-IDENTIFIER: US 5005041 A

TITLE: Focus detecting apparatus having a plurality of focus detecting areas

Brief Summary Text (6):

That is, when the focus detecting area is set at the center of the picture plane, there is no problem if the major portion of an object lies at the center of the picture plane, but if the major portion of the object is off the center of the picture plane, there is the inconvenience that erroneous distance measurement is caused and results in a blurred photograph. In order to eliminate such difficulty, the camera is once moved laterally and distance measurement is effected with the major portion of the object placed at the center of the picture plane, and the direction of the camera is returned to its original position while the then focus adjusted state is kept, whereafter the operation of releasing the shutter is performed. However, such operation is cumbersome, and cannot be executed in an urgent case. For example, it has been difficult to meet the requirement of taking a photograph in which a laterally moving object lies at a position off the center of the picture plane.

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☐ 19. Document ID: US 4988182 A

L2: Entry 19 of 30

File: USPT

Jan 29, 1991

DOCUMENT-IDENTIFIER: US 4988182 A

TITLE: Ophthalmic lenses having a progressively variable focal power

Brief Summary Text (15):

It is, therefore, an object of the present invention to provide ophthalmic lenses having a progressive variable refracting power, wherein a wide clear vision area is assured in a portion for distance vision, visibility can be improved in an area from an intermediate portion to a portion for near vision aberrational density can be reduced to minimize distortion and blurring of an image in an aberration-concentrated area at each side of the principal meridional curve extending from a lower position in a portion for distance vision to the portion for near vision, and a user who wears these kinds of lenses for the first time can comfortably wear them.

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☐ 20. Document ID: US 4729018 A

L2: Entry 20 of 30

File: USPT

Mar 1, 1988

DOCUMENT-IDENTIFIER: US 4729018 A
TITLE: Endoscope apparatus with rotating shutter

Brief Summary Text (12):

It is an object of the present invention to provide an endoscope apparatus for effectively correcting brightness variations in observation portions caused by different distances from an image pickup portion and for obtaining an image with little blurring for a dynamically moving portion to be examined.

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☐ 21. Document ID: US 4554585 A

L2: Entry 21 of 30

File: USPT

Nov 19, 1985

DOCUMENT-IDENTIFIER: US 4554585 A
TITLE: Spatial prefilter for variable-resolution sampled imaging systems

Detailed Description Text (13):

As indicated in FIG. 3, low-pass prefilter 308 includes a diffusing surface 310 situated in spaced relationship with respect to the pattern of picture element 306 of imager 300, with the spacing distance between diffusing surface 310 and each picture element 306 of the pattern increasing as a direct function of the size of that picture element. The effect is to vary the spatial cutoff frequency of the prefilter 308 in accordance with the spatial resolution of each region of image samples. In particular, the relatively small distance between diffusing surface 310 and the high-resolution central region of imager 300 results in a relatively small amount of blurring occurring in the portion of the image light detected by the picture elements 306 of the high-resolution central region (so that low-pass prefilter 308 exhibits a relatively high cutoff frequency in the vicinity of the high-resolution central region of imager 300). However, the relatively large distance between diffusing surface 310 of low-pass prefilter 308 and imager 300 in the vicinity of the low resolution periphery of imager 300 results in a relatively large amount of blurring of the image light incident on the picture elements of the low-resolution periphery of imager 300. Therefore, the spatial cutoff frequency of low-pass prefilter 308 in the vicinity of the low-resolution periphery of imager 300 is relatively low. Thus, low-pass prefilter 308 operates as a spatial low-pass prefilter having a spatial cutoff frequency which varies continually from one region thereof to another. The specific case shown in FIG. 3, in which the spatial distribution pattern of discrete picture elements of imager 300 is assumed to be either the substantially scale-invariant distribution pattern of FIG. 2a or that of FIG. 2b, the distance between the diffusing surface 310 and imager 300 varies linearly from the axis of symmetry of imager 300 through the high-resolution central region thereof to the periphery thereof. The amount of blurring provided by diffusing surface 310 is proportional to the slope of diffusing surface 310 with respect to the plane of imager 300. Appropriate selection of this slope and appropriate determination of the diffusive properties of diffusing surface 310, permits the spatial cutoff frequency characteristics of low-pass prefilter 308 to be achieved which minimize aliasing, without needless loss of resolution.

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☐ 22. Document ID: US 4338012 A

L2: Entry 22 of 30

File: USPT

Jul 6, 1982

DOCUMENT-IDENTIFIER: US 4338012 A

TITLE: Focusing screen

Detailed Description Text (7):

As regards the linear image in defocus condition thus observed on this focus indicating part, when the double image by the \pm 1st order diffracted light is indicated on the upper and lower light deflecting portions as shown in FIG. 5B and the focus condition has been brought about, that is, the object image has become accurately coincident with the focusing screen, the blur of the image (or double image) by the diffraction disappears and the upper and lower images separated with the boundary between the positions 2 and 3 as the border become coincident with each other. By this phenomenon, the focus condition can be easily detected.

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☐ 23. Document ID: US 4338002 A

L2: Entry 23 of 30

File: USPT

Jul 6, 1982

DOCUMENT-IDENTIFIER: US 4338002 A

TITLE: Method of determining the proper individually given positions of dioptric portions on eyeglasses

Brief Summary Text (14):

Another surface of the housing, especially the other major surface thereof, is provided with a vision or reading test chart. This test chart can have at least two lines of alphanumeric characters, each of these lines being of a different length. A final reexamination of the exact position of the close-range portion is made possible by providing this test chart. In this case, the user of the glasses can first read the line of the shortest length, and no blurring of the images must occur either at the beginning or at the end of the line, even though the eyes are being angularly displaced while reading that line. Thereafter, the testing is repeated for the next-following line of a greater length, until finally blurring of the images is encountered at the ends of the respective line for a certain line length. When the close-range dioptric portions of the eyeglasses are situated at the proper positions, the limits of sharp vision must lie symmetrically to the greatest possible extent, that is, the region of blurred images at the respective left or right end of the line must be disposed at approximately the same distance from the beginning or the end of the line. As a rule, a line extending over the entire width of a letter size paper should be sharply seen over its entire length without angular movement of the head of the examinee.

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☐ 24. Document ID: US 4146898 A

L2: Entry 24 of 30

File: USPT

Mar 27, 1979

DOCUMENT-IDENTIFIER: US 4146898 A

TITLE: Non-contact magnetic toner transfer system

Detailed Description Text (10):

The thickness of the air gap at the transfer station has been found to greatly affect the quality of the image produced on the paper. The optimum air gap thickness has been found to be about 4 mil. With air gaps of less than about 4 mil, random transfer of toner has been found to often occur, which produces background on the paper, although the toner that is transferred by the transfer pulse produces a clear image. For example, in one series of tests using a 3 mil gap, about half the toner was drawn off at the edge of the paper in some tests. It is believed that the random toner transfer for gaps of less than about 4 mil is due to induced fields resulting from the dielectric tape moving between the two closely spaced electrodes. When air gaps of more than 4 mil are used, the printed characters become progressively more blurred as progressively larger air gaps are used. A noticeable degradation of image occurs even at a 5 mil air gap, and the image quality becomes very noticeably blurred and unacceptable in many applications when air gaps of more than about 8 mil are utilized. Thus, the distance between the paper and the tape should be maintained substantially constant at all toned regions of the tape, and with a substantially uniform air gap which is preferably of about 4 mil thickness, to avoid blurring of portions of the image.

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☒ 25. Document ID: US 3628430 A

L2: Entry 25 of 30

File: USPT

Dec 21, 1971

DOCUMENT-IDENTIFIER: US 3628430 A

TITLE: PHOTOGRAPHIC APPARATUS FOR PRODUCING A TAMPERPROOF IDENTIFICATION CARD

Detailed Description Text (6):

Masks 11 and 12 are spaced from objective 7 and lens 9, respectively, distances sufficient to cause vignetting, or blurring, of the internal and external edge portions defined by the masks on film 1, and to preclude any mask edge definition in the composite image. Since masks 11 and 12 are complementary, they are further positioned such that the blurred internal and external edge portions of the images defined by such masks are contiguous. The coaction of the contiguous blurred edge portions, and the absence of any mask edge definition, produce on film 1 a unique transition zone 13 between the object images having no clearly discernible edges.

CLAIMS:

2. Apparatus for forming a composite image of at least first and second objects at different magnifications, said apparatus comprising:

a. a first objective for forming an image of the first object in a primary image plane at a first magnification;

b. means, including a second objective, for forming an image of the second object in the primary image plane in complementary relation with the first object image and at a second magnification;

c. first masking means for masking a portion of the light from the first object and for defining in the primary image plane an edge portion of the first object image, said first masking means positioned in the field of said first objective and spaced therefrom a distance sufficient to blur said edge portion of the first object image; and

d. second masking means for masking a portion of the light from the second object and for defining in the primary image plane an edge portion of the second object image, said second masking means positioned in the field of said second objective and spaced therefrom a distance sufficient to blur said edge portion of the second

object image;

e. said first and second masking means being complementary and positioned such that said blurred edge portions of the first and second object images are contiguous and coactively produce a blurred transition zone without clearly discernible edges between the first and second object images in the composite image.

3. Photographic apparatus for forming a composite image of at least first and second objects at different magnifications, said apparatus comprising:

a. a first objective for forming an image of the first object in a primary image plane at a first magnification:

b. means, including said first objective, a second objective, and a reflecting means, for forming an image of the second object in the primary image plane in complementary relation with the first object image and at a second magnification, said reflecting means being positioned so as to reflect light from said second objective to said first objective;

c. first masking means for masking a portion of the light from the first object and for defining in the primary image plane an edge portion of the first object image, said first masking means positioned in the field of said first objective and spaced therefrom a distance sufficient to blur said edge portion of the first object image; and

d. second masking means for masking a portion of the light from the second object and for defining in the primary image plane an edge portion of the second object image, said second masking means positioned in the field of said second objective and spaced therefrom a distance sufficient to blur said edge portion of the second object image;

e. said first and second masking means being complementary and positioned such that said blurred edge portions of the first and second object images are contiguous and coactively produce a blurred transition zone without clearly discernible edges between the first and second object images in the composite image.

5. Photographic apparatus for producing a composite image of at least first and second objects on a light sensitive surface at different magnifications, said apparatus comprising:

a. a casing adapted to contain the light sensitive surface and having a first objective for forming an image of the first object on the surface at a first magnification;

b. a housing detachably connected to said casing and including means defining a first aperture through which light from the first object is transmitted to said first objective;

c. means, supported by said housing and including a second objective which forms an image of the second object at the object distance of the first object, for producing an image of the second object in the field of said first objective at a second magnification, said second objective being constructed and located with respect to said first objective so that said first objective produces a composite image of both objects on the surface;

d. first masking means for masking a portion of the light from the first object and for defining on the surface an edge portion of the first object image, said first masking means positioned in the field of said first objective and spaced therefrom a distance sufficient to blur said edge portion of the first object image; and

e. second masking means for masking a portion of the light from the second object and for defining on the surface an edge portion of the second object image, said second masking means positioned in the field of said second objective and spaced a distance therefrom sufficient to blur said edge portion of the second object image;

f. said first and second masking means being complementary and positioned such that said blurred edge portions of the first and second object images are contiguous and coactively produce a blurred transition zone without clearly discernible edges between the first and second object images in the composite image formed by said first objective.

8. Apparatus for attachment to a camera to facilitate photographing a composite image of at least two objects at different magnifications, the apparatus being for use with a camera of the type having a primary image plane and an objective for forming an image in the primary image plane at a first magnification, said apparatus comprising:

a. a support;

b. means for detachably connecting said support to the camera in operative relation with the camera objective;

c. first masking means, located on said support so as to be in the field of the camera objective when said support is connected to the camera, for masking a portion of the light from a first object in the field of the camera objective and for defining an edge portion of the image of the first object formed in the primary image plane by the camera objective, said first masking means spaced from the camera objective a distance sufficient to blur said edge portion of the first object image;

d. means, located on said support and including a second objective which forms an image of the second object at the object distance of the first object, for cooperating with the camera objective to form an image of a second object in the primary image plane in complementary relation with the image of the first object and at a second magnification;

e. second masking means, located on said support in the field of said second objective, for masking a portion of the light from the second object and for defining in the primary image plane an edge portion of the second object image, said second masking means spaced a distance from said second objective sufficient to blur said edge portion of the second object image;

f. said first and second masking means being complementary and positioned such that said blurred edge portions of the first and second object images are contiguous and coactively produce a blurred transition zone without clearly discernible edges between the first and second object images in the composite image.

12. In a camera for producing a composite image of at least first and second objects at respectively different magnifications on a photographic medium, the combination comprising:

a. first optical means, including a first objective, for forming an image of the first object on the photographic medium at a first magnification;

b. second optical means, including a second objective, for forming an image of the second object on the photographic medium in complementary relation with the first object image and at a second magnification;

c. first masking means for masking a portion of the light from the first object and for defining on the photographic medium an edge portion of the first object image, said first masking means positioned in the field of said first objective and spaced therefrom a distance sufficient to blur said edge portion of the first object image;

d. second masking means for masking a portion of the light from the second object and for defining on the photographic medium an edge portion of the second object image, said second masking means positioned in the field of said second objective and spaced therefrom a distance sufficient to blur said edge portion of the second object image;

e. said first and second masking means being complementary and positioned such that said blurred edge portions of the first and second object images are contiguous and coactively produce a blurred transition zone without clearly discernible edges between the first and second object images in the composite image; and

f. means for moving the photographic medium between a first position for receiving light from the first object transmitted by said first optical means, and a second position for receiving light from the second object transmitted by said second optical means.

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☐ 26. Document ID: JP 2001208524 A

L2: Entry 26 of 30

File: JPAB

Aug 3, 2001

DOCUMENT-IDENTIFIER: JP 2001208524 A

TITLE: IMAGE PROCESSOR AND IMAGE PROCESSING METHOD

Abstract (2):

SOLUTION: An image pickup means 10 is so arranged to take a plurality of images different in the degree of blurring as caused by focal deviation for the same scene, distance information calculation means 12A-12F and 13A-12C to calculated distance information to an object and regional division means 14A-14C and 15 to divide an image into a plurality of areas based on the calculated distance information.

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☐ 27. Document ID: EP 961506 A1

L2: Entry 27 of 30


File: EPAB

Dec 1, 1999

DOCUMENT-IDENTIFIER: EP 961506 A1

TITLE: Autostereoscopic display

Abstract (1):

CHG DATE=20000103 STATUS=O> A method and system for generating a video image is disclosed in which an object is monitored with a video camera to produce a sequence of video frames. Each of the video frames is divided into a plurality of regions, each region being representative of a portion of said object. For example, the frame of the video image may include the head and shoulder region of a user. Regions corresponding to predetermined facial features may be selected, such as the chin, opposing edges of the mouth, the nose, and the outer edge of each eye. At least one of the plurality of regions is selected. In the illustrative example, the selected region may comprise the mouth of the monitored user. The selected region is then recombined with each of the remaining regions of the video frame to form a display video image. The sequence of video frames is then displayed such that the selected region is perceived by an observer to form a sharp image, and remaining regions of said display video image are less sharp in accordance with the distance between said respective portion of said object and said video camera. 

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☐ 28. Document ID: JP 2001208524 A

L2: Entry 28 of 30

File: DWPI

Aug 3, 2001

DERWENT-ACC-NO: 2002-181708

DERWENT-WEEK: 200224

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TITLE: Image processor divides image into several areas to extract desired photographed object area based on distance to photographed object judged by photographing images, with varying blur level

Standard Title Terms (1):

IMAGE PROCESSOR DIVIDE IMAGE AREA EXTRACT PHOTOGRAPH OBJECT AREA BASED DISTANCE
PHOTOGRAPH OBJECT JUDGEMENT PHOTOGRAPH IMAGE VARY BLUR LEVEL

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☒ 29. Document ID: EP 961506 A1

L2: Entry 29 of 30

File: DWPI

Dec 1, 1999

DERWENT-ACC-NO: 2000-055257

DERWENT-WEEK: 200005

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TITLE: Method for generating three-dimensional video images e.g. for use in video conferencing

Basic Abstract Text (2):

DETAILED DESCRIPTION - The selected region is then recombined with each of the remaining regions of the video frame to form a display video image. The sequence of video frames is then displayed such that the selected region is perceived by an observer to form a sharp image, and remaining regions of the display video image are less sharp in accordance with the distance between the respective portion of the object and the video camera. An INDEPENDENT CLAIM is also included for a system to implement the method of generating three-dimensional video images.

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☐ 30. Document ID: JP 2001516670 W WO 9914088 A1 AU 9893135 A US 5923027 A EP 1015286 A1 US 6097024 A CN 1270560 A US 6262410 B1 KR 2001024011 A

L2: Entry 30 of 30

File: DWPI

Oct 2, 2001

DERWENT-ACC-NO: 1999-243989

DERWENT-WEEK: 200172

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TITLE: Moisture sensor for vehicle windshield

Equivalent Abstract Text (1):

NOVELTY - An imaging system (30) is used to image a predetermined portion of the windshield onto an imaging sensor (32), I.e. a complementary

metal-oxide-semiconductor active pixel sensor, such that objects at the approximate distance of the windshield are sharply in focus at the image plane, while objects at larger distances are blurred. The imaging optical system may include a single biconvex lens (33), while a fog detector includes a light emitting diode (68) with a lens (66).

Equivalent Abstract Text (10):

NOVELTY - An imaging system (30) is used to image a predetermined portion of the windshield onto an imaging sensor (32), I.e. a complementary metal-oxide-semiconductor active pixel sensor, such that objects at the approximate distance of the windshield are sharply in focus at the image plane, while objects at larger distances are blurred. The imaging optical system may include a single biconvex lens (33), while a fog detector includes a light emitting diode (68) with a lens (66).

Equivalent Abstract Text (19):

NOVELTY - An imaging system (30) is used to image a predetermined portion of the windshield onto an imaging sensor (32), I.e. a complementary metal-oxide-semiconductor active pixel sensor, such that objects at the approximate distance of the windshield are sharply in focus at the image plane, while objects at larger distances are blurred. The imaging optical system may include a single biconvex lens (33), while a fog detector includes a light emitting diode (68) with a lens (66).

Full Title Citation Front Review Classification Date Reference Sequences Attachments

KMCL Draw Desc Image

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| LESS.DWPI,TDBD,EPAB,JPAB,USPT,PGPB. | 2289421 |
| LESSES.DWPI,TDBD,EPAB,JPAB,USPT,PGPB. | 37 |
| IMAG\$3 | 0 |
| IMAG.DWPI,TDBD,EPAB,JPAB,USPT,PGPB. | 889 |
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| IMAGAMI.DWPI,TDBD,EPAB,JPAB,USPT,PGPB. | 19 |
| ((IMAG\$3 OR PICTUR\$3 OR VIDEO\$3) WITH (DIVID\$5 OR DIVISS OR SEGMENT\$5 OR PORTION\$5 OR SUBIMAG\$3) WITH (OBJECT\$3 OR REGION\$3) WITH (BLUR\$5 OR UNSHARP\$5 OR (LESS ADJ1 SHARP\$3)) WITH (DISTANC\$5 OR SEPARAT\$5)).USPT,PGPB,JPAB,EPAB,DWPI,TDBD. | 30 |

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